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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,226	05/24/2001	Eiju Katsuragi	16869S-027400US	5895

20350                      7590                      10/19/2006

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EXAMINER

OSMAN, RAMY M

ART UNIT                      PAPER NUMBER

2157

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



## DETAILED ACTION

### *Status of Claims*

1. This communication is responsive to amendment filed July 24, 2006, where applicant amended claims 1,3,5,7,9,11,13 and 15, and cancelled claims 2,4,6,8,10,12,14,16. Claims 1,3,5,7,9,11,13 and 15 are pending.

### *Response to Arguments*

2. Applicant's arguments with respect to claims 1,3,5,7,9,11,13 and 15 have been considered but are moot in view of the new ground(s) of rejection, as follows below.

3. Applicants amendments overcome 112 second paragraph rejection. The 112 second paragraph rejection is withdrawn.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1,2,8,9 rejected under 35 U.S.C. 103(a) as being unpatentable over Ronstrom (US Patent No 6,438,707) in view of Mutalik et al (US Patent No 6,611,923).**

6. In reference to claims 1 and 9, Ronstrom teaches a data duplicating method and system respectively that connects a first information processing system comprised of a first host computer and a first storage device and at least one second information processing system

Art Unit: 2157

comprised of a second host computer and a second storage device through a data transfer path and copies first update data generated in said first information processing system to said second information processing system (column 2 lines 25-40 & 50-65, column 4 lines 4-11 & 35-41, column 10 lines 30-47, column 11 lines 22-50, Ronstrom teaches a primary and a backup system that are synchronized with update data),

the second information processing system generating second update data after taking over information and data processing performed by said first information processing system when said first information processing system stops operating (column 2 lines 25-40 & 50-65, column 4 lines 4-11 & 35-41, column 10 lines 30-47, column 11 lines 22-50, Ronstrom teaches the backup system assuming functions of the primary system when a fault is detected in the primary system).

Ronstrom fails to explicitly teach wherein said second information processing system generates difference control information for identifying second update data generated in said second information processing system after taking over information and data processing performed by said first information processing system when said first information processing system stops operating, and after resumption of operation said first information processing system, said second update data is selectively copied to said first information processing system on the basis of said difference control information. However, Mutalik teaches a backup server backing up a main mass storage system, and then restoring the mass storage system if a malfunction occurs on the mass storage system, for the purpose of restoring a malfunctioned storage system (column 3 lines 15-35, column 4 lines 5-10 & 30-60, column 5 lines 4-20).

Art Unit: 2157

It would have been obvious for one of ordinary skill in the art to modify Ronstrom wherein said second information processing system generates difference control information for identifying second update data generated in said second information processing system after taking over information and data processing performed by said first information processing system when said first information processing system stops operating, and after resumption of operation said first information processing system, said second update data is selectively copied to said first information processing system on the basis of said difference control information as per the teachings of Mutalik for the purpose of restoring a malfunctioned primary system.

Ronstrom fails to explicitly teach wherein said difference control information is a bit map that indicates the presence or absence of completion of data duplication of said first and second update data at a plurality of individual units of data storage in each of said first and second storage devices. However, Kitagawa teaches an updating bit map table indicating the presence or absence of completion of data duplication of said first and second update data at a plurality of individual units of data storage in each of said first and second storage devices for the purpose of managing backup control and recovery (column 10 lines 1-15 and column 13 line 30 – column 14 line 15).

It would have been obvious for one of ordinary skill in the art to modify Ronstrom wherein said difference control information is a bit map that indicates the presence or absence of completion of data duplication of said first and second update data at a plurality of individual units of data storage in each of said first and second storage devices as per the teachings of Kitagawa for the purpose of managing backup control and recovery.

Art Unit: 2157

**7. Claims 3-7,10-16 rejected under 35 U.S.C. 103(a) as being unpatentable over Ronstrom (US Patent No 6,438,707) in view of Mutalik et al (US Patent No 6,611,923) in further view of Yanai et al (US Patent No 5,544,347).**

8. In reference to claims 3,5,11 and 13, Ronstrom teaches a data duplicating method and system respectively that connects a first information processing system comprised of a first host computer and a first storage device and at least one second information processing system comprised of a second host computer and a second storage device through a data transfer path and holds the same data in duplicate in said first and second information processing systems by copying first update data generated in said first information processing system to said second information processing system (column 2 lines 25-40 & 50-65, column 4 lines 4-11 & 35-41, column 10 lines 30-47, column 11 lines 22-50, Ronstrom teaches a primary and a backup system that are synchronized with update data),

the second information processing system generating second update data after taking over information and data processing performed by said first information processing system when said first information processing system stops operating (column 2 lines 25-40 & 50-65, column 4 lines 4-11 & 35-41, column 10 lines 30-47, column 11 lines 22-50, Ronstrom teaches the backup system assuming functions of the primary system when a fault is detected in the primary system).

Ronstrom fails to explicitly teach wherein said second information processing system generates difference control information for identifying second update data generated in said second information processing system after taking over information and data processing performed by said first information processing system when said first information processing

Art Unit: 2157

system stops operating, and after resumption of operation said first information processing system, said second update data is selectively copied to said first information processing system on the basis of said difference control information. However, Mutalik teaches a backup server backing up a main mass storage system, and then restoring the mass storage system if a malfunction occurs on the mass storage system, for the purpose of restoring a malfunctioned storage system (column 3 lines 15-35, column 4 lines 5-10 & 30-60, column 5 lines 4-20).

It would have been obvious for one of ordinary skill in the art to modify Ronstrom wherein said second information processing system generates difference control information for identifying second update data generated in said second information processing system after taking over information and data processing performed by said first information processing system when said first information processing system stops operating, and after resumption of operation said first information processing system, said second update data is selectively copied to said first information processing system on the basis of said difference control information as per the teachings of Mutalik for the purpose of restoring a malfunctioned primary system.

Ronstrom fails to explicitly teach wherein the respective method and system include asynchronously copying first update data generated in said first information processing system to said second information processing system. However, Yanai teaches a data backup system with different ways of data transfer such as asynchronously copying first update data generated in said first information processing system to said second information processing system (column 3 lines 1-10).

It would have been obvious for one of ordinary skill in the art to modify Ronstrom by asynchronously copying first update data generated in said first information processing system to

Art Unit: 2157

said second information processing system as per the teachings of Yanai since this is one of the known ways of transferring backup data.

Ronstrom fails to explicitly teach wherein said difference control information is a bit map that indicates the presence or absence of completion of data duplication of said first and second update data at a plurality of individual units of data storage in each of said first and second storage devices. However, Kitagawa teaches an updating bit map table indicating the presence or absence of completion of data duplication of said first and second update data at a plurality of individual units of data storage in each of said first and second storage devices for the purpose of managing backup control and recovery (column 10 lines 1-15 and column 13 line 30 – column 14 line 15).

It would have been obvious for one of ordinary skill in the art to modify Ronstrom wherein said difference control information is a bit map that indicates the presence or absence of completion of data duplication of said first and second update data at a plurality of individual units of data storage in each of said first and second storage devices as per the teachings of Kitagawa for the purpose of managing backup control and recovery.

9. In reference to claims 7 and 15, Ronstrom teaches a data duplicating method and system respectively that connects a first information processing system comprised of a first host computer and a first storage device and at least one second information processing system comprised of a second host computer and a second storage device through a data transfer path and holds the same data in duplicate in said first and second information processing systems by copying first update data generated in said first information processing system to said second information processing system (column 2 lines 25-40 & 50-65, column 4 lines 4-11 & 35-41,



Art Unit: 2157

column 10 lines 30-47, column 11 lines 22-50, Ronstrom teaches a primary and a backup system that are synchronized with update data),

the second information processing system generating second update data after taking over information and data processing performed by said first information processing system when said first information processing system stops operating (column 2 lines 25-40 & 50-65, column 4 lines 4-11 & 35-41, column 10 lines 30-47, column 11 lines 22-50, Ronstrom teaches the backup system assuming functions of the primary system when a fault is detected in the primary system).

Ronstrom fails to explicitly teach wherein said second information processing system generates difference control information for identifying second update data generated in said second information processing system after taking over information and data processing performed by said first information processing system when said first information processing system stops operating, and after resumption of operation said first information processing system, said second update data is selectively copied to said first information processing system on the basis of said difference control information. However, Mutalik teaches a backup server backing up a main mass storage system, and then restoring the mass storage system if a malfunction occurs on the mass storage system, for the purpose of restoring a malfunctioned storage system (column 3 lines 15-35, column 4 lines 5-10 & 30-60, column 5 lines 4-20).

It would have been obvious for one of ordinary skill in the art to modify Ronstrom wherein said second information processing system generates difference control information for identifying second update data generated in said second information processing system after taking over information and data processing performed by said first information processing

Art Unit: 2157

system when said first information processing system stops operating, and after resumption of operation said first information processing system, said second update data is selectively copied to said first information processing system on the basis of said difference control information as per the teachings of Mutalik for the purpose of restoring a malfunctioned primary system.

Ronstrom fails to explicitly teach wherein the respective method and system include synchronously copying first update data generated in said first information processing system to said second information processing system. However, Yanai teaches a data backup system with different ways of data transfer such as synchronously copying first update data generated in said first information processing system to said second information processing system (column 3 lines 1-10).

It would have been obvious for one of ordinary skill in the art to modify Ronstrom by synchronously copying first update data generated in said first information processing system to said second information processing system as per the teachings of Yanai since this is one of the known ways of transferring backup data.

Ronstrom fails to explicitly teach wherein said difference control information is a bit map that indicates the presence or absence of completion of data duplication of said first and second update data at a plurality of individual units of data storage in each of said first and second storage devices. However, Kitagawa teaches an updating bit map table indicating the presence or absence of completion of data duplication of said first and second update data at a plurality of individual units of data storage in each of said first and second storage devices for the purpose of managing backup control and recovery (column 10 lines 1-15 and column 13 line 30 – column 14 line 15).

Art Unit: 2157

It would have been obvious for one of ordinary skill in the art to modify Ronstrom wherein said difference control information is a bit map that indicates the presence or absence of completion of data duplication of said first and second update data at a plurality of individual units of data storage in each of said first and second storage devices as per the teachings of Kitagawa for the purpose of managing backup control and recovery.

### *Conclusion*

10. Applicant is advised that the above specified citations of the relied upon prior art are only representative of the teachings of the prior art, and that any other supportive sections within the entirety of the reference (including any figures, incorporation by references, and claims) is implied as being applied to teach the scope of the claims.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US Patent No 6,397,229, Menon et al teaches a storage controller utilizing a bitmap for monitoring.

US Patent No 6,366,986, St Pierre et al teaches a method for differential backup in a computer storage system utilizing mapping the file system.

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 2157

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramy M. Osman whose telephone number is (571) 272-4008. The examiner can normally be reached on M-F 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RMO  
October 13, 2006

  
ABDULLAHISALAD  
PRIMARY EXAMINER